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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/619,669	07/19/2000	Yasuyuki Morishita	DP-652 US	2152
21254	7590	11/18/2003	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			NGUYEN, DILINH P	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/619,669	MORISHITA, YASUYUKI	
	Examiner	Art Unit	
	DiLinh Nguyen	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## **Office Action Summary**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- NO period for reply specified above, unless otherwise specified, the minimum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 August 2003.

2a)  This action is FINAL.      2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**sposition of Claims**

4)  Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s)       is/are withdrawn from consideration.

5)  Claim(s) 1-20 and 27 is/are allowed.

6)  Claim(s) 21-26 is/are rejected.

7)  Claim(s)       is/are objected to.

8)  Claim(s)       are subject to restriction and/or election requirement.

8)  Claim(s) \_\_\_\_\_

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.

2  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_  
4)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchikoba et al. in view of Applicant's Admitted Prior Art (figs. 5A-5B).

Uchikoba et al. disclose a semiconductor device (figs. 5-6, column 9, lines 28 et seq.) for a semiconductor IC, an internal circuit, an input/output terminal, electrode wiring, and signal wiring, the device comprising:

a substrate 10 having a first conduction type (P-type);  
a first region 21 having a second conduction type (N type) opposite the first conduction type and being connected to the input/output terminal;  
a second region 24 enclosing the first region, the second region having the second conduction type, the first region and the second region being electrically separated;  
a third region 34 formed adjacent the second region, the third region having the second conduction type, the third region being formed below the second region at a location other than at a bottom of the first region (fig. 6).

Uchikoba et al. disclose the claimed invention except for a fourth region having the first conduction type.

Applicant's Admitted Prior Art (figs. 5A-5B) disclose a diffusion layer 102 surrounded by the substrate 101 and the first and second regions, wherein the layer 102 having the first conduction type (P-type). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Uchikoba et al. to act as a shield to prevent minority carriers from entering the memory cell and to prevent soft errors ascribable to the minority carriers.

- Regarding claim 22, Applicant's Admitted Prior Art discloses an impurity concentration of the layer 102 decreases in a direction away from the first region.
- Regarding claim 23, Applicant's Admitted Prior Art discloses the second region 105 is connected to a first constant electrical potential ground terminal 108.
- Regarding claim 24, Applicant's Admitted Prior Art (figs. 5A-5B) disclose the layers 104 and 105 are manufactured with a CMOS gate electrode disposed on a surface of the substrate.
- Regarding claim 25, Applicant's Admitted Prior Art (figs. 5A-5B) disclose a diffusion region 106 having first conduction type (P) and connected to the ground terminal 9.
- Regarding claim 26, Applicant's Admitted Prior Art discloses an output/ input terminal 107.

***Response to Arguments***

Applicant's arguments filed 8/12/03 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case:

Uchikoba et al. disclose the claimed invention except for a fourth region having the first conduction type.

Applicant's Admitted Prior Art (figs. 5A-5B) disclose a diffusion layer 102 surrounded by the substrate 101 and the first and second regions, wherein the layer 102 having the first conduction type (P-type). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Uchikoba et al. to act as a shield to prevent minority carriers from entering the memory cell and to prevent soft errors ascribable to the minority carriers.

In response to applicant's argument that it is not obvious to combine the references and would destroy the operation of that circuit, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### **REASONS FOR ALLOWANCE**

Claims 1-20 and 27 are allowed.

The following is an examiner's statement of reasons for allowance:

Uchikoba et al. and Nakazato et al. fail to disclose the combination of all the limitations recited, including the first region being circularly enclosed by the second and third regions, the first region, the second region and the third region thereby forming a parasitic bipolar transistor in which the first region serves as a collector thereof and the second region and the third region serve as an emitter thereof.

Therefore, the amended limitation together with the overall structure of an input/output protection device is neither anticipated nor rendered obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN  
November 12, 2003

A handwritten signature in black ink, appearing to read "DLN", is positioned above a small, faint printed signature that also appears to read "DLN".